2010–2011

The year in review

Fonds de la recherche en santé du Québec

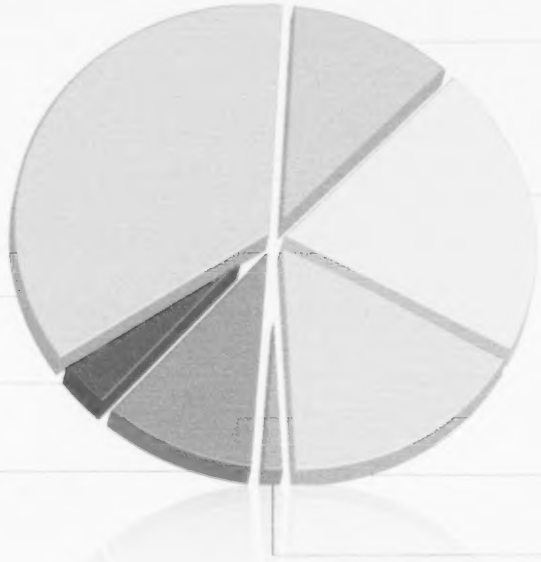
Québec

Awards and grants

IN 2010-2011, THE FRSQ INVESTED $101.3 MILLION IN AWARDS AND GRANTS, OF WHICH $32.3 MILLION WAS PLEDGED BY PUBLIC AND PRIVATE PARTNERS.

50.6 M$ (50%) TO SUPPORT RESEARCH CLUSTERS

50.7 M$ (50%) TO SUPPORT STUDENTS, RESEARCHERS AND RESEARCH PROJECTS



36.4 M$[a] (36%) **19 research centres**

4.0 M$ (4%) **11 research groups**

10.2 M$ (10%) **17 thematic research networks**

11.5 M$ (11%) **480 training awards**
135 masters awards
216 doctoral awards
129 postdoctoral awards

21.5 M$ (21%) **421 career awards (regular research scholars and clinicians)**
177 Junior 1 Researcher awards
124 Junior 2 Researcher awards
78 Senior Researcher awards
39 National Researcher awards
3 research chairs

17.0 M$ (17%) **304 research and strategic initiative grants**

0.7 M$ (1%) **31 international collaborations**

In total, 504 volunteer researchers helped to evaluate the applications submitted to some 35 FRSQ funding programs.

a) Including innovative strategic development projects.

Highlights

The 2010-2011 year was marked by a series of initiatives through which the FRSQ contributed to the creation of knowledge to enhance the health and wellbeing of the population and support the knowledge economy in the life sciences. Here are some of the highlights.

SIGNIFICANT STRATEGIC INITIATIVES

INCREASED SUPPORT FOR EXCELLENCE IN CLINICAL RESEARCH CENTRES

As part of the Québec Biopharmaceutical Strategy, the FRSQ invested $2.6M to support the development of clinical research excellence in centres. Under the *new clinical research support in partnership with the biopharmaceutical industry* component of the research centre funding program, the FRSQ contributed to 17 of its 19 centres, enabling them to become more effective clinical research partners.

The FRSQ also played a pivotal role in the upcoming implementation in Québec of the Strategy for Patient-Oriented Research, which will be launched across Canada in partnership with the Canadian Institutes of Health Research, the Ministère du Développement économique, de l'Innovation et de l'Exportation (MDEIE) and the Ministère de la Santé et des Services sociaux (MSSS).

SIGNIFICANT STRATEGIC INITIATIVES

A SIGNIFICANT PERSONALIZED HEALTH CARE STRATEGY

In collaboration with public, private and government partners, the FRSQ co-piloted the development of a provincial personalized health care strategy stemming from extensive consultations with over 140 local and international leaders in relevant sectors. The Québec government has pledged $20 million to support the first phase of the strategy – an investment that will be matched by industrial partners.

SIGNIFICANT RESEARCH INITIATIVES INTO CHRONIC DISEASES

Chronic diseases constitute a major challenge for the health care system and the wellbeing of all Québecers, and the FRSQ has introduced a strategic initiative to tackle the issue. The agency and its partners Pfizer and the MSSS funded five first-line projects focused on transforming clinical practices to foster the integration of prevention measures and the management of patients suffering from chronic diseases.

A SIGNIFICANT RESEARCH INITIATIVE INTO PRIMARY CARE

The FRSQ has begun to map out a strategy to develop and structure research into primary care in Québec.

FIRST PROJECTS FUNDED AS PART OF INTERNATIONAL COLLABORATIONS

In 2010-2011, the FRSQ and its partners funded the first projects carried out in collaboration with international partners, including the initiatives undertaken by the agency as a member of European networks.

For their very first time, teams of researcher from Québec and Europe received support as part of a call for proposals by ERA-Net Neuron, a European research network focused on the neurosciences and mental illness. Because the FRSQ joined the network in June 2009, Québec researchers were invited to apply for funding.

The two projects that involve teams from Québec aim to better understand the genetic mechanisms of autism and schizophrenia and explore perinatal stress and its epigenetic impacts on depression. The research programs are being carried out in partnership with researchers in Germany, Spain, France and Italy.

This year, the FRSQ, Génome Québec and the National Science Foundation of China (NSFC) also announced support for a first project under their joint research initiative in genomics and disease. Launched in July 2010, the project brings together research teams in Québec and China in an effort to elucidate the causes of male infertility using cutting-edge genomic methods.

Photo: In January 2011, the FRSQ hosted the first meeting held outside Europe of the 13 agencies involved in ERA-Net Neuron. Representatives from 11 countries were in attendance: Canada, Spain, France, Germany, Luxemburg, Italy, Israel, Austria, Finland, Poland and Romania.

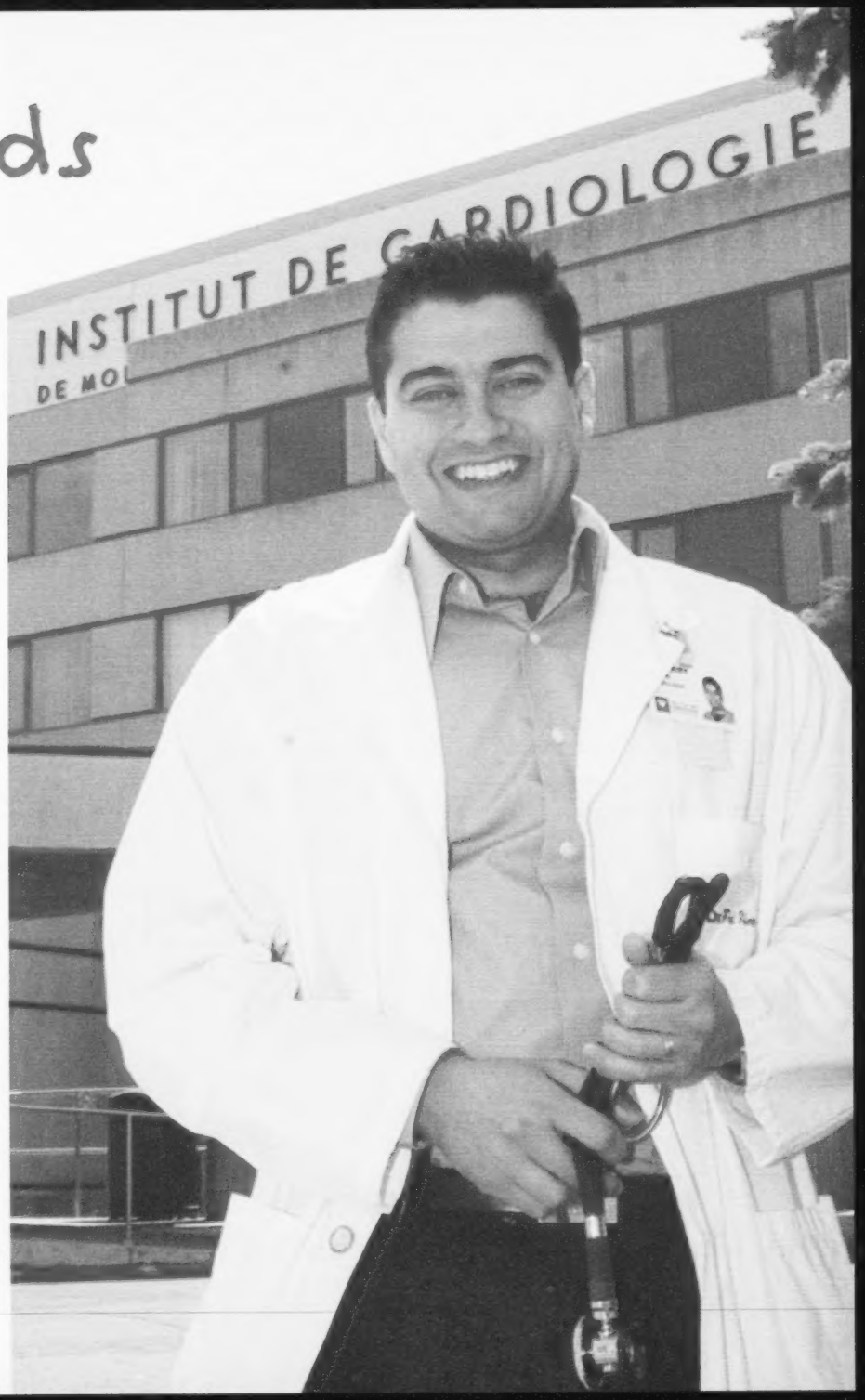
Romain Cayrol: *Astrocytes migrating to endothelial cells in the brain.*

Excellence awards

Research training and career development is at the heart of the FRSQ's activities. In 2010-2011, the Fonds presented several awards recognizing outstanding young researchers.

THE PRIX ANDRÉ-DUPONT AWARDED BY THE CRCQ AND THE FRSQ

The **Prix André-Dupont**, which is presented by the Club de recherches cliniques du Québec (CRCQ) and the FRSQ for excellence in biomedical research to a young investigator with less than ten years' experience in independent research, was awarded to **Dr. Paul Khairy**, MD, Ph.D., associate professor in the Faculty of Medicine at Université de Montréal, clinical researcher, cardiologist-electrophysiologist, director of the Montreal Heart Institute's Adult Congenital Heart Centre and holder of the Canada Research Chair in Electrophysiology and Adult Congenital Heart Disease.



Dr. Paul Khairy,
Prix André-Dupont winner.

Top and bottom: Louise Vandelac, recipient of the Prix Jacques-Rousseau and Gundula Ellen Min-Oo, recipient of the ADESAQ-FRSQ excellence award

THE PRIX JACQUES-ROUSSEAU AWARDED BY THE ACFAS AND THE FONDS DE RECHERCHE

Created in 1980 to honour botanist, ethnologist and former Acfas secretary Jacques Rousseau, the Prix Jacques-Rousseau is given to a researcher or team of researchers whose exceptional scientific achievements have generated impacts reaching far beyond a specific research field and bridged various disciplines. Québec's three Fonds de recherche, the FRSQ, FQRNT (Fonds québécois de recherche sur la nature et les technologies) and FQRSC (Fonds québécois de recherche sur la société et la culture) jointly fund the award.

The **2010 Prix Jacques-Rousseau** was awarded to **Louise Vandelac**, Ph.D., full professor in the Department of Sociology, director of the Institut des sciences de l'environement (ISE) and researcher in the Centre de recherche interdisciplinaire sur la biologie, la santé, la société et l'environnement (CINBIOSE) – a World Health Organization and Pan American Health Organization collaborating centre – at Université du Québec à Montréal (UQAM). Prof. Vandelac is a member of the International Team in Nanosafety (TITNT), the Centre de recherche interinstitutionnel en écotoxicologie, the Centre de recherche et d'information indépendante sur le génie génétique (France) and the Pôle Risques of the Maison de la recherche en sciences humaines (Université de Caen Basse-Normandie, France). She is also an associate professor in the Department of Social and Preventive Medicine at Université de Montréal and a member of the Canadian Natural, Social and Human Sciences Committee of the Canadian Commission for UNESCO.

THE ADESAQ-FRSQ EXCELLENCE AWARD

Valued at $2 000, the **excellence award** presented by the Association des doyens des études supérieures du Québec (ADESAQ) for the best doctoral dissertation in the health sciences category is granted in collaboration with the FRSQ. This year's recipient is **Gundula Ellen Min-Oo**, a Ph.D. student in the laboratory of Philippe Gros, Ph.D., in the Department of Biochemistry at McGill University, for her work entitled *The genetic basis of malaria susceptibility: Uncovering novel host factors in a mouse model of blood-stage infection.*

ANNUAL FRSQ EXCELLENCE AWARDS

Each year, in an effort to support a new generation of researchers and promote scientific communication, the FRSQ presents $1 000 awards to agency-funded research centre graduate and postdoctoral students and research fellows to recognize the best presentations given as part of a "student day" at a research centre seminar.

NAME	RESEARCH PROJECT	AFFILIATION
Alvarez, Jorge	Preactive multiple sclerosis lesions are associated with early disturbances in the blood-brain barrier	Centre hospitalier de l'Université de Montréal Research Centre
Careau, Emmanuelle	Development of a questionnaire to assess collaboration at interprofessional meetings	Centre for interdisciplinary research in rehabilitation and social integration (CIRRIS)
Carter, Sophie	Role of Sirt1 deacetylase in the transcriptional control of macrophages involved in aortic stenosis	Centre de recherche de l'Institut universitaire de cardiologie et de pneumologie de Québec
Cattan, Valérie	Effect of the addition of vasa vasorum in a vascular substitute on in vitro vasoreactivity	Centre de recherche du Centre hospitalier affilié universitaire de Québec
Gibot, Laure	In vivo revascularization of a microvascularized tissue-engineered skin substitute	
Courboulin, Audrey	Role of miR-204 in human pulmonary arterial hypertension: New therapies	Centre de recherche du Centre hospitalier universitaire de Québec (CHUQ)
Moreira, Wilfried	A common mechanism of cell death induced by anti-*Leishmania* drugs	
Niane, Lalah Malika	Role of P2X3 purinergic receptors in the hypoxic ventilatory response of developing rats	
Coutsinos, Dimitri	K65R drug resistance development in subtype B and C HIV-1	Lady Davis Institute for Medical Research of the Jewish General Hospital
Huang, Jinghuan	The QKI-6 and QKI-7 RNA binding proteins block proliferation and promote Schwann cell myelination	
Léveillé, Simon	Enhancing the anti-tumor immune response with the combination of oncolytic virotherapy and dendritic cell stimulation	
Penafuerte, Claudia	The fusion of IL-2 and soluble TGFß receptor II ectodomain (FIST) inhibits tumor development by acting as a potent angiostatic compound and inducing a robust Th1 immune response in a mouse model of melanoma	
Soye, Kaitlin	RIG-1 for the inhibition of the measles virus by retinoids	
Williams, Patrick	A novel dendritic cell population generated by fusing granulocyte-macrophage colony-stimulating factor and interleukin-21 induces tumor-antigen specific immunity	

NAME	RESEARCH PROJECT	AFFILIATION
Gauthier, Nicolas	HMG-CoA lyase deficiency in mice: An HL model of human deficiency	CHU Sainte-Justine Research Centre
Langlais, David	The missing link in controlling POMC expression	Institut de recherches cliniques de Montréal (IRCM)
Lebert-Ghali, Charles-Étienne	The HoxA cluster is haploinsufficient for hematopoietic stem cell activity	Hôpital Maisonneuve-Rosemont Research Centre
Leblond, François	Role of p53 in vascular antioxidant defense	Montréal Heart Institute Research Centre
Tadevosyan, Artak	Nuclear angiotensin-II receptors regulate de novo RNA transcription: role of IP3 and nuclear Ca^{++} transients	
Morin, Chantal	An osteopathic approach to screening for otitis in children: is it possible?	Centre de recherche du Centre hospitalier universitaire de Sherbrooke (CHUS)
Plourde, Mélanie	Genetics, cognition and omega-3 fatty acid metabolism: Is there a link?	Centre sur le vieillissement du Centre de santé et des services sociaux – Institut universitaire de gériatrie de Sherbrooke
Raptis, Helli A.	Control of wrist and muscle relaxation by shifting spatial frames of reference for motoneuronal recruitment: Involvement of corticospinal pathways	Centre for Interdisciplinary Research in Rehabilitation of Greater Montréal
Shousha, Shérif	Serotonin blockade with ketanserin attenuates ST-segment and myocardial perfusion defects secondary to collagen-induced platelet activation	Centre de recherche de l'Hôpital du Sacré-Coeur de Montréal
Sindi, Shireen	Stress, memory and hippocampal volume: Do the tests lead to stress?	Fernand-Séguin Research Centre, Hôpital Louis-H. Lafontaine

Consulting services

Again this year, the FRSQ lent its expertise to a series of initiatives pertaining to Québec's research and innovation structure.

Each year, the MDEIE appoints the FRSQ to oversee the establishment of international expert committees to assess the applications for funding submitted to the Canada Foundation for Innovation (CFI). The FRSQ then recommends the most deserving applications to the MSSS, MELS and MDEIE, which will ensure the Québec government's share of the investment. In 2010-2011, the committees set up by the FRSQ evaluated 48 applications as part of three Leaders Opportunity Fund competitions. In total, 38 projects were approved for funding.

The FRSQ also advises the MDEIE on its research infrastructure funding program. In 2010-2011, the agency assessed the scientific relevance of the plans of the Centre for interdisciplinary research in rehabilitation and social integration (CIRRIS) and the Institut de réadaptation en déficience physique de Québec (IRDPQ) for the acquisition of new specialized equipment. In addition, the FRSQ helped to evaluate the international research projects funded by the MDEIE under the Programme de soutien aux initiatives internationales de recherche et d'innovation, which fosters collaborations between researchers in Québec and abroad.

Finally, the FRSQ acts as a consultant for third-party organizations in the preparation and implementation of their scientific programs. For example, in 2010-2011, the FRSQ contributed to the development and scientific assessment of three Génome Québec programs (Recruitment, Pilot Projects and Human Health programs) and the FOCUS program spearheaded by the Québec Consortium for Drug Discovery (CQDM).

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Fonds de la recherche en santé
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